Boston Oct. 8th 1843

Dear Sir,

I enclose an extract (not literal) of a letter to Dr. Gray, on the subject of the Application of Mathematics to Botany! — I expected to have had some consultation with Dr. G. about this matter, and am disappointed ~~at~~ finding him absent: — I wrote him that I was coming on shortly; — and he, was not aware that I contemplated leaving the Country, — which may account for his not answering my letter. — I should have liked to have taken up the subject myself, and made a comparison of the different Genera and Families of Plants; — and perhaps the suggestion may induce some one to look into the matter. — At all events, if Dr. G. should think it at all worth while to send it to Silliman, he is at liberty to modify it, or make such comments as he may think proper. — Excuse the trouble I have given you, to take this little matter in charge. —

I expect to sail in a day or two, and may not have an opportunity of seeing you again. — With my best wishes for your health & prosperity,

Respectfully Yours,

Charles Pickering

Prof. Benjamin Peirce

(Substance of a portion of a letter to Dr. A. Gray - July 5th 1843)

You may perhaps recollect that I once spoke to you about the numerical relation of leaves and floral envelopes;— the theory being, that as the latter are likewise resolvable into leaves, their relative disposition should form a fundamental character.— My meaning will be rendered apparent, if in place of saying, "leaves[1] alternate, sepals[5] five, petals[5] five, Stamens[10] ten, Carpels[3] three", or again, "leaves[2] opposite, Sepals[4] four, Petals[4] four, Stamens[8] eight, Carpels[2] two", we agree upon $\left\{\begin{matrix}15503\\24482\end{matrix}\right\}^{2}$;— (another sign might be used for what exceeds ten, perhaps the usual (∞) for indefinite; or a full-stop where any part is deficient. thus (24·82); or a hyphen (-) where the fact is not ascertained.).—

We might naturally suppose that the odd numbers, or their multiples, would accompany the alternate leaves, and the even ones, those which are opposite; but this is not always the case. The Cruciferæ, the Begoniæ ~~(as you will perhaps so)~~ &c., form exceptions.— Still there is a very strong tendency to this, which may be observed, even in the exceptions. Thus, in the Gentianeæ, there is a frequent disposition to vary to the multiple of 2; various Genera of the Melastomaceæ are 4-petalled; in the Labiatæ, Scrophularineæ, Acanthaceæ &c., the corolla where not 4-cleft and regular, is usually bilabiate;— in the Bignoniaceæ ~~an stamen is apt~~ an abortive stamen is often present;— the Peloria takes place in a tribe having alternate leaves; &c. &c.—

In practical Botany I have always been guided more by leaves than flowers, — the former likewise, being always available.— In determining a Plant, it is my custom first to examine the leaves, and especially whether serrate or entire, or compound.—

It has appeared to me that something at least might be gained in the facility of Reference, by the use of numbers in Botany:— and as I may not myself have an opportunity of pursuing the subject; if you think the suggestion of any importance you are at liberty to give it publicity.—

Charles Pickering.

PAID

(double

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Prof. Benjamin Pierce

Cambridge

Mass.

Washington, July 5th 1843.

Dear Sir,

Your letter has been by me a long time,— but had there been a prospect of accomplishing anything in a practical way, you would have heard from me before.— Sir. William is certainly not complimentary towards the Naturalists of the Exploring Expedition, but this would not influence their course in any matter which is likely to benefit Science. There are however difficulties of all sorts in the way of sending any portion of our Collections abroad; and I cannot at present see how it is to be brought about. It is not probable however that we have a great deal from those Countries, that is not included in the English Collections.— Our New Zealand Plants number 398, collected in February & March, about the Bay of Islands (including one trip to Wangaroa and a second across the island to Hokianga, on which coast the vegetation is infinitely more rich). We have besides 50 species, obtained by an Officer in a day's excursion on the Auckland Islands. New Zealand was the hardest place I ever visited, for finding things in flower; nevertheless (I speak not of myself) we brought some excellent eyes to bear. From the variety of obscure forms, whoever I think, meddles with New Zealand plants, will need to have all his wits about him.— In Orange Harbour, about 15 miles from Cape Horn, we collected in a week 220 species. The vegetation is richer here than at the Falkland Islands, and there are forests.— From a comparison made at the time with Gaudichaud, we had 51 not in his Flora of the Falkland Is.; and he gives 30 not found by ourselves.— A few species from Good Success Bay in the Straits of Le Maire, are included in the above enumeration.—

I rejoice to learn that Mr. J. Hooker has made so many dissections from life. This alone would enlist my utmost abilities in furthering his views. When I first heard of his sailing, I thought he would be cheated out of Botany altogether, but his chances have turned out a great deal better than I anticipated. Nevertheless Being confined to not a very great variety of Objects, and as I have always understood

rather keen, he must have become more familiar than any one else, with the Antarctic Plants. — If before the final publication of his work he should happen to visit America, I trust he would meet with no difficulty in getting access to our specimens; and with the aid of such information as Mr. Brackenridge could give, I flatter myself he would pick up some additions. Anything in my Notes that might be useful to him, should be at his service, so far as I have a "say" in the matter. If however he should not be able to visit us, I doubt not he will turn out such work, that we shall be able to furnish anything that may be left, in the way of an Appendix. —

The Oregon & California Plants were shipped in 1841, from the Sandwich Is. direct ~~from~~ the United States. The vessel as well as I have been able to make out, touched at Valparaiso & thence proceeded on a voyage to China!, thence to Europe, where she was sold!, and subsequently going on a voyage to the West Indies, finally dropped our plants at Havanna! — They have been written for by the Department, and we are in hopes of some day seeing them. It is my opinion that you ought to be allowed access to them, to publish as you get on with your Work; — for I suppose you would not wish to make a separate job of them. Mr. Rich, I believe coincides with me. But I do not think it is worth while to make any movement at present. — Among 1700 species, it will be hard if there is nothing new. — The most promising ground was the neighbourhood of the Shasty Mountain, on the land route from Oregon to California — where were Sarracenias, Scarlet Thistles, &c. &c. —

By the way I see there is a "Helianthus petiolaris". Has this been critically compared with H. annuus? — There is something of this sort in Oregon & California, naturalized about Indian Huts, &c. — As for H. annuus coming "from Peru"; we certainly never saw it there, and I doubt whether any one else.

You may perhaps recollect that I once spoke to you about the numerical relation of leaves and Floral envelopes. The Theory being, that as the latter are likewise resolvable into leaves, their relative disposition should form a fundamental character. This my meaning would be rendered apparent if instead of saying, "leaves[1] alternate, sepals[5] five, petals[5] five, stamens[10] ten, carpels[3] three", or "leaves[2] opposite, sepals[4] four, petals[4] four, Stamens[8] eight, carpels[2] two", we simply agree upon {15503 / 24482}. — Another character might be used

for what is above (10); or (7) perhaps, since it is not often called for.* — We might naturally suppose that the odd numbers would go with the alternate leaves, and the even ones with the opposite; but this is not always the case; instance, the Cruciferæ, and you will perhaps recollect, the "Begoniæ". — There is however a very strong tendency this way, as may be observed even in the exceptions, as — The Gentians are very apt to vary to a quaternary disposition; many Genera of Melastomaceæ are 4-petalled; in the Labiatæ, Scrophulariæ., Acanthaceæ., &c, the corolla is apt to be bilabiate, & one Stamen to abort; — in the Endogenæ, 6 is likewise a multiple of 3; &c. &c.

In practical Botany I have always gone more by leaves than flowers, — and besides, the former are always available. — In looking at a plant, I now find myself first examining the leaves, and afterwards, the flowers. — Further, the leaves being serrated or entire, is one of my first inquiries.

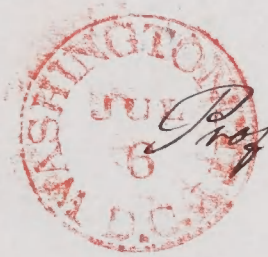
As however I may not pursue this matter any further, I wish you to examine; — whether the labour of describing plants may not be abridged by the adoption of Numbers? — and, whether references would not be rendered more convenient by this adoption? — and as I hope to see you before long, let me know what you think about the matter. —

Excuse the latter portion of this letter, which is a "Midnight" production.

Yours truly,
Charles Pickering.

After Wally sent to Boston,
August 11.

* Note. — A full-stop (⊙) might be used where any part is deficient, or not ascertained, thus (24·82)



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Prof. Asa Gray

Cambridge

Mass.

Philadelphia Sept 6th 1856.

Dear Sir

The bearer of this is my friend Dr H. Mc. Murtrie who proposes to make an experiment on New York taste in Natural History, and visits your city for the purpose of ascertaining what can be done in the way of a course of Zoological Lectures. Dr McM. must be well known to you by reputation, though I think you have not hitherto been brought into contact. Any attentions you may shew him in the way of introductions or otherwise will be regarded as a personal obligation.

I have the pleasure of acknowledging the receipt of two letters, and two parcels for Dr. Darlington which I forwarded the same day. I look upon it as next to impossible that Cryptis virginica should be a Native plant, though to what foreign species it belongs we have not yet been able to determine. I will however do what I can to procure a supply. Aira praecox is also very clearly an introduced plant. If there is no one here who has paid particular attention to the Grasses, there will be a difficulty in supplying your other wants.

Trichochloa capillaris is rare — I once found it about 9 miles south-East of this city, but could not now point out the locality.

Calamagrostis brevipilis — I have only seen Nuttall's specimens which were obtained at Quaker bridge.

Trisetum palustre is found in various places, but I could not point out any one in particular.

Hierochloa borealis is a plant of the North, and is very rare here, though common in New England.

Gymnopogon racemosum. I have never seen living, though it was found in the vicinity of Camden N.J. by the late Mr. Collins.

I will afford me great pleasure to be the means of affording any aid to Prinius in his undertaking. We shall be able to furnish him with

specimens of most of those on the list (Muhlenberg's excepted), at least sufficient to identify the plant; and I will see what can be done, in the course of a few days, — though perhaps it is too late for the opportunities to St. Petersburgh.

I do not know that I can help you in the affair of Plum & Cherry. — Our species are in a sad state of confusion in the books. — Of the true Plum I only know the Beach Plum of the Coast, and have good evidence of the Wild red Plum of Darlington, & the Chickasaw Plum. — The reason why there are Plums I cannot tell, & it may be that the Garden Cherry is a Plum? — It is possible that Decandolle's P. Virginiana is founded on P. padus, which I have understood is sometimes cultivated here. As to the Cherry in Washington Square, the story about it is this — that Lewis & Clark brought it from the Rocky Mountains & that it grew in McMahon's garden till it was transferred to the Square, about 12 years ago — It has grown to a stout tree without getting into the books, unless you admit Rafinesque's publication about 4 years since. — R. made it a Plum I think because the stone is oblong. — The fruit is in short few-flowered racemes, is black & about as large as that of the Wild Cherry, but rather insipid in taste.

We expect Mr Nuttall daily, by sea, from the Sandwich Islands. He has sent home an immense mass of materials.

Dr. McMurtrie leaves unexpectedly for New York and I am obliged to close in haste.

Yours,
Charles Pickering.

Philadelphia Sept. 23d 1836.

Dear Sir,

I have received your letter this morning, and reply in haste — The Secretary in his letter to the Academy said nothing about compensation, and of course no steps have been taken on that point — Furthermore, both the Academy & the Philosophical Society have declined making any personal nominations. — The Academy will probably recommend a little more extended plan for the Zoological department. Unfortunately the latter subject is not a popular one, but if you have paid any attention to it you must be aware that it is capable of being divided into three or four branches, each one of which will require full as much attention as Botany — and infinitely more in the preservation of the subjects. — If the Comparative Anatomist should be capable of taking a branch of Zoology, that would make some difference, and if also the 3 general assistants could be attached to the Zoological Department — What the Mineralogist & Geologist could want of an assistant I am at a loss to conceive; unless indeed, what ought to be borne in mind throughout, he should be one capable of supplying his place in case of accident.

I am also of opinion that there should be more than one Natural History Draughtsman; and I apprehend difficulty on this score, as it is an exceedingly rare talent — and without ~~competent ones~~ it there will be a lame & impotent conclusion. — Among the most promising ones, I have thought of young Mc'Murtrie, who painted the chief part of the Dr's Transparencies. He has had a good deal of schooling in this matter, is very ready with his pencil — but I think his productions speak for themselves. He is quite young, hardly yet 20, but I think might be exceedingly useful, & I would be glad if some place could be found for him.

John B. Carr, grandson to William Bartram, has spoken to me about the situation of Practical Gardener — Dr. Torrey is acquainted

with him, but I believe you have never seen him. I am disposed to think favourably of the application, provided only spirits can be kept out of his way on ship-board.

With regard moreover to the scientific corps, the main point is to get the material, and it is pretty evident that it will take at least all that the country affords — With regard to the relation in which the members shall stand to each other, I am not competent to say much. — professing myself however a Republican. —

As I have pretty much concluded on going, will you have the kindness to ask Mr Reynolds whether it would not be proper for me to make application direct, to the Secretary — at the same time make an apology for my not writing to him; as he promised to be here very shortly after his last letter. — You will oblige me by giving me his answer as soon as possible.

I have selected some of the grasses for Prince, and will finish as soon as I can find leisure.

I have just learned that there are some things for me in town, from Dr. Torrey —

Yours truly

Charles Pickering

The above is written very hastily, and I hope you will make due allowances. —

Philadelphia, Sept. 28th 1836

Dear Sir,

I have finished the selection of Grasses for Trinius, and have been enabled, I believe, to supply all the desiderata on your list, with the exception of Muhlenberg's species, which you know belong to the American Philosophical Society. — In many instances, the specimen being unique, it was only practicable to send flowers. — I have added several species which happened to come to hand during the selection, making the whole number seventy, but I think I have sent no Non descripts. — Some suggestions occurred, which should they prove well founded, you might communicate to Trinius as they are not mentioned in the letter. —

Cyperi virginica — cf. C. schaenoides

Panicum conchroides — a very strange grass, more like Conchrus than Panicum — perhaps a new Genus; but I did not examine the flowers (the only portion I was able to find)

"Calamagrostis confinis Nutt" — The name only given by Nutt. from Willd. & there is nothing to answer to it in his herbarium

Atheropogon oligostachyum — cf. Spartina!

Aegilops hystrix. — cf. Elymus! — which I think occured to us jointly on examination

Rottboella? campestris Nut — = We have several undescribed North American species of Elymus.

"Melica racemosa Muhl" — If my memory serves me, this is wanting in Muhl's herbarium; but there is a specimen in Schweinitz's, which may afford a clue to it. — cf. Festuca nutans Ph. & whether the latter is given by Muhl.

Hordeum pusillum. Nut. — Same from Southern Atlantic States; also from Norfolk & Wilmington by Dr Darlington. —

Poa glauca Nutt — cf. Uniola n.s. of Torrey, in Rocky mtn. plants.

Hierochloa pauciflora Brown — ~~need compare~~ The specimen sent to Schweinitz, seems to be the same with the true Hierochloa alpina, found on the White Mts. & in Lapland &c. —

Agrostis rupestris Anct. — White Mts.

Panicum hispidum (Oplismenus) — Salt-marsh about 9 miles from Boston — rarish. with me & prob. unknown to other New England Botanists. —

Danthonia! striata (Avena striata Mx). The White Mountain species seems different from that from New York State (the Trisetum purpurascent, Torrey) though closely allied — no specimens have been sent to Trinius. —

Holcus! alpinus (Aira alpina. Anct.) — ~~same fr~~ White Mts. & same from Norway, through Schweinitz, under the name of "Aira atropurpurea."

Oxydenia attenuata Nutt. — Nothing to do with the Eleusine filiformis of the Tropics, or of our Southern Botanists, or of Mart; though possibly of the same genus?

Aira montana. Anct — The three-flowered Aira! of the White Mountains — where however, the A. flexuosa is infinitely more common.

I have just run over the Plums & Cherries in the Herbarium, & send a few suggestions, without having time to consult books for priority or descriptions.

1. Prunus pubescens. Pk. (P. littoralis Bw), the Beach-Plum of the Sea-Coast of the Northern & Middle States. – A specimen from Muhlenberg under the name of P. pygmea. – & also P. maritima Wang. – the best name.

2. P. hiemalis. The wild red-Plum of the interior of Penn. & which I have heard of on the Penobscot (the same as P. Americana Dark.), the leaves are coarsely serrate & there is a constant tendency to a long serrated acumination – what is P. Acuminata Mx?

3. P. chicasa. – The leaves finely serrated, the flowers small & on short peduncles – Raf. has perhaps the same or P. pumila from N. Jersey – but it needs more careful comparison.

4. P.? "an hirsuties Ell." – "Montgomery Co. (N.C.?)" per Schweinitz. – We have perhaps the same from Arkansa as "Prunus n. sp" from Nuttal. – but neither specimens have flower or fruit.

1. Cerasus Caroliniana

2. C. virginiana. Mx. f. –

3. C. obovata or serotina of some – like the preceding, but serratures of leaves more acuminate & fruit red (The Choke Cherry of Bw.) – Grows 20 feet high – principally in the north, but Short has sent it from Kentucky.

4. C. of Rafinesque fm Washington Square – brought by Lewis & Clarke.

5. C. nigra? of Hook? – I have only seen specimens from Schweinitz, labelled "Bethlehem" – It has a coarse Diospyroid serrated leaf, with sometimes three or four glands on the petiole – The fruit is in racemes, but almost as large as a Beach-plum – from the leaf indeed one would take it for a Plum.

6. C. pumila – & also P. depressa descript. – A Northern species, which I have found near Boston & which we have from Long's Exped. to L. Superior-ye. – My plant was a Shrub about ~~four~~ three feet high, & I have never seen the ripe fruit – the leaves vary much apparently with age

7. Cerasus borealis Mx. f.

8. C.? ramosus Baldw. ms. from East Florida – not very strongly marked, but probably a good species – approaching in its leaves C. Borealis – Baldwin's specimens are poor, but Mr. Read brought a good specimens from St. Augustine. – All have flowers only & I am not able to say whether it is a Cherry or Plum.

I will take back all I said in my former letter about the Garden Cherry – but I have not examined the question of the distinction of the two Genera.

Philadelphia Dec 3d 1836

Dear Sir,

I have received your two letters, of the 30th ult & 1st inst., and from the tenor you have taken, it seems to me rather unfounded alarm at my proceedings in procuring Zoological works. Should it mistaken in saying I have nearly all I want — it is true I have raked together with a good deal of pains, from individuals & publick Institutions, a number of works which neither others nor myself had any expectations of finding in this country, and perhaps I have the greater part of those which may be considered most essential; still, as I told the Secretary, the most recent works in general are not among them, and it is necessary to procure them in order to take advantage of the labours of Men instead of indulging ourselves on the same ground. — I will allude to the object again in my next letter to the Secretary, which will probably be in a day or two. Some time since I transmitted to him a list of articles wanted for the draughtsmen which I had procured from Mr. Audubon, to the time of some $1500 & these that sum if imported here.

It was at the Secretary's request that I applied to Mr Lehman, he having been named in an interview with Mr. Audubon. So far from interfering with the prospect of young Mr. Maclurie or of your protegee, his going would, it seems to me, be most fortunate for them. You must know that besides Audubon & Le Sueur, I look upon Lehman & Bayton as the only Natural Historys draughtsmen we have (I hope you consider my letters as confidential as your own) — I consider young Mr Maclurie as possessing the qualifications for making one, but he needs good instructions and I should fear if separated from the corps & left to his own unaided efforts, the voyage would be of little advantage to him in my point of view. Indeed one chief reason of the impatience of his father for a promise from the Secretary was, that he might take him away from his mercantile occupations & place him at once with Lehman! — I have not forwarded your letter to the Secretary respecting him, agreeing with you in every respect, besides having ascertained that there is no necessity for immediate action — If his father thinks it best, I will write direct to the Secretary and give him my views in detail, which course it seems to me is much preferable.

Bayton is the artist who executes Mr. Say's shells — I have long

had my eye on him from seeing other specimens of his work, and I should not be surprised if he could render the Expedition more service than even Lehman — From his business of designing, engraving in various styles, and superintending the colouring of prints, in which he has been engaged for many years for Carey & Lea, he is better acquainted with all the requisites of getting out a book, and is better qualified to give instructions to young artists and particularly with regard to colouring, being a good judge of the quality of different colours and knowing from long experience which are to be avoided. — But I should never feel willing to rob the country of both these men — Mr. Lehman is strongly inclined to go and there is no difficulty on the score of his partner; the only obstacle is a domestic one which I presume will yield in the course of time.

I have obtained possession of the Annales des Sciences Naturelles from 1832 to 1836 inclusive, but must depend upon you for the earlier numbers. Mr. Peale once spoke to me of a copy which was once offered to him by some one connected with Peale's Museum in your city — perhaps you might learn something by inquiring there.

I do not know whether any of your members of the Lyceum are acquainted with Capt. Courtenay of Boston. He is personally unknown to me but I have received information from various quarters which leaves no doubt in my mind that he is the right sort of man to accompany the Expedition. His discoveries in the vicinity of Boston, in Marine Zoology, I can appreciate, having some knowledge of that district myself. He does not ask for any artificial aid in obtaining rank but proposes to work out his own standing, if afforded an opportunity — This again is in the right spirit — Now, notwithstanding our corps is, as you say, getting somewhat unwieldy, I have often cast about as to where I was to get a little assistance myself — all the assistance it seemed to me we likely to go in one direction especially since my friend Pickering has been persuaded to give up the idea of going, he an officer on the part of his station. Now this Capt Courtenay is, I feel satisfied, capable of becoming a real assistant.

I saw Com. Jones last evening, but in company with other gentlemen, and can only say that I was much pleased with his appearance & manners

Yours truly

Charles Pickering

Asa Gray M.D.

Lyceum of Nat. History

New York.

Philad. March 20th 1837

Dear Sir,

I have just received a letter from Reynolds containing matters of some interest, which will be best communicated in his own words:

"I have this evening had an audience of two hours with the new President — I had my chart and text-book with me — We examined the law — examined the reports of committees — examined — the great theatre of our future exploits — the Project & all — read Jefferson's instructions to Lewis & Clark — in a word — I remained thus employed from 7 till 9 — talked over the subject of the corps — the necessity of organization — shewed the necessity of the Frigate — got the fact admitted — touched gently upon our difficulties with the Secretary — I urged in general terms all the points of importance — even to the necessity of another vessel — and I know the impression was decided and for good — I started twice before I could get away and then with the request to call at all times when I had anything to say — I am satisfied of one thing — the opposition have had no encouragement from that quarter — the fact is — the whole subject was apparently new to him — in detail quite so. — I have the self-complacency to think M. D. will find some trouble to undo what I did to night" (March 17th)

Almost immediately on our return I despatched young Mr. Mantvie to Washington, with specimens of his drawings, which were shown to the Secretary, President &c &c. & as far as I can learn with high approbation. He has now returned & I am induced to think his mission has not been without effect.

I send you a copy of your list of Botanical works, forwarded to me some time since. Several of them you

will see are already secured, either by myself or in the Voyages brought home by Lieut Wilkes. Some of the works mentioned may require further consideration viz. Ruiz & Pavon qu? anything more than the conspectus Nov. Gen.? - Cavanilles' plates contain a much greater number of figures & of a more convenient size. — Beauvois' Flore d'Owase & Benin? — Aublet Guiane? — Sprengel Systema Vegetabil? —

The last on dit of the Secretary is that "the Copps is now so large that they will eat up all the provisions !!!!!!!!!!!!!!!!!!!!!!!!!!!! whoever this insinuation was intended for I feel disposed to cast it off as regards myself.

Yours, truly
Charles Pickering

= Forster - Gen. Plant. ins. Mar. Austr.
= 1 Gærtner - de fructibus.
Humboldt - essai sur la Geog. Plant. (there is a new Edit or new work published recently)
1 Lamarck - Illustrat. des Genres.
1 Linnæus - Flora Lapponica.
1 Persoon - Synopsis Plantarum.
Petit de Thouars - Plantes des Iles d'Afrique Austr.
———— Gen. nov. Madagasc.
Ruiz & Pavon - Flora Peruviana & Chilensis
Fries - Syst. Mycologicus
Achille Richard - Mem. sur les Balanophorees
= Hooker & Arnott - Bot. of Beechey's voyage
Lindley - Introd. Nat. Syst. 2 Edit.
= ———— Gen. & Sp. Orchidearum
Blume - Enum. Plant. Javæ.
= Beauvois - Agrostographia
———— Flore d'Owase & Benin.
Sprengel - Systema Vegetabil.
Kaulfuss - Enumeratio Filicum.
Aublet - Plantes de Guiane
= R. Brown - Prodrom. fl. N. Holl.
———— gen. remarks on the Geograph & Syst. Bot. Terra Austr.
———— Bot. of Flinder's voyage.
= ———— Tuckey's voyage to Congo.
= = = Decandolle - Prodromus.
= ———— Memoirs all
1 Forskal - Fl. Egypt - Arab.
Agardh - Synops. Algarum.
Gaudichaud - Bot. of Freycinet's voyage
Prest - Reliquæ Haenkeanæ
o Hooker & Greville - Icones Filicum
= ———— — Enumeratio Lycopodiae.
Eschweiler - Systema Lichenum
1 Acharius - Lichenographia
Trinius - Icones graminum.
Martius - Flora Brazilien - 1st Vol. Cryptog - 2d Agrostog. N. ab E.
———— Monog. Amaranthaceæ
Ach. Richard - Mem. sur Rubiaceæ.
Borg St. vincent - Bot of Duperry's voyage
Chamisso & Schlecht. - Bot. of Kotzebue's voyage in the Linnæa
= Hooker & Arnott - Flora I. Amer. in Bot. miscell. - Journ. Bot. & comp. to Bot. mag.
Endlicher Prodr. flor. Norfolkicæ (drawing by Bauer)
1 Jussieu - Genera Plantarum
o Kunth - Synopsis Plant. Aequinoct
Ad. Jussieu - Mem. Rutaceæ
Ad. Brongniart - Mem. sur Rhamneæ
1 ———— Classification des Champignons
1 ———— Vegetaux Fossiles.
= ———— Gen. Euphorb.
o Lessing - Synops. gen. Compositæ.
o Bentham - Gen. et Spec. Labiatarum
o Nees ab Esenbeck - Asters.

o Nees ab Esenbeck - Synopt. gen Cyperacea in Linnæa
o Kunth - Agrostographia
—— 2 vol. with plates.
1 Hackhouse - Nereis Brittanica
1 Papers on the Fucei by Lamouroux & D'Orbigny
o London - Encyc. Plants
o Wight & Arnott - Flore Penin. Ind. Orient.
o —— Contrib. to Bot. India
Poeppig & Endlicher Nova Genera.

In addition to which the following works have occurred to me as deserving consideration
Willdenow Species Plant.
Labillardiere - Prod. Flor. N. Holl.
Auguste St. Hilaire - Flore de Brésil
Koch - Synopsis Flora Germanic et Helvet (for a model)
Humboldt & Bonpland - Nova Gen. & Sp.
Blume - Rumphia.
Guillemein - Archives de Botanique
The Linnæa
Guillemein & Perrotet - Flore de Senegambie
Adanson - Familles de Plantes.
Brideli - Muscologia. Sp. gen.

Washington April 27th 1838

Dear Gray,

Mr. Reynolds has commissioned me to write & do what he is much more competent to than myself — viz. inform you of our present prospects so far as I know. — I do not know whether he has told you that I had gone over to the Enemy, but it is a fact that I had the honour of dining with our new Commodore about a week ago, and think many of his ideas not bad, and though rather hasty in his conclusions and in danger of running against a few posts, if he takes time I have reason to believe he will bring up about right. — It is the general impression here that he is invested with unlimited power, which you may suppose is no more than is due to the elevated station he occupies! —

Seriously however, I have come to the following conclusions since I have been here, 1st that there is no use in making another attempt to organise the thing out of the Navy, & 2, that though there is a possibility of a proposition for taking it out of the hands of the Navy receiving the sanction of Congress I do not by any means feel sanguine on that point. — In the mean time I have the pleasure of informing you that the Administration stands pledged that an honourable Station shall be assigned to our friend R. — The bill has not yet come up in the Senate but probably may in the course of next week. — Com. Wilkes has gone to Norfolk to look after his vessels; & probably before long will visit New York for the purpose of looking over his trash in the Stores at Brooklyn & seeing what it may be worth while to take.

The weather has been very cold & disagreeable until to day, when on taking a short walk I find the Peach & Cherry trees in full flower & the grass green in every direction, so that the Country round about does really look pleasant.

Yours Truly
Charles Pickering.

Boston. Nov. 10th, 1875

My dear Sir,

I commenced a letter in September at North Conway, but was unexpectedly called to town, and have only recently become fairly settled for the winter. I am at No. 9 Beacon St, and shall be most happy to receive a visit, whenever you may chance to be in Boston, to finish the work in which we were engaged. My hours are from 11„30 to 2 p. m.

I congratulate you on your brilliant success in procuring aquatic plants, as shown by your letter of July 19th. I never went into boating and dredging, but fifty years ago looked carefully for aquatics in Essex County:

"Zannichellia palustris", I could never find.

"Potamogeton natans," with narrow immersed leaves and growing in rather deep water, I used to find.

"——— Claytoni", with broad elliptical floating leaves and growing in pools, I used to find.

"——— amplifolius", without floating leaves and the immersed ones broad, used to grow in Pleasant pond near the outlet, but has dis-appeared.

"——— gramineus", I used to find, localities not recollected.

"——— praelongus", unknown to me.

"——— perfoliatus", seen by myself only near Philadelphia, but by Henry Little near Boston.

"——— Robbinsii", unknown to me.

"Vallisneria spiralis", I could never find.

"Isoetes", I could never find fruit.

"Chara", I used to find two or three undetermined species.

What is the grass-leaved aquatic that fills the outlet of Pleasant pond all the way through the swamp?

Dr Gray quotes "Oakes catalogue". His catalogue would settle many doubtful points, and tend to show changes that have taken place. Oakes says in a letter, Essex County has been pretty thoroughly "ransacked" by him and myself.

The paper birch, I used to find in Gloucester, and I think in Wenham, perhaps in your locality.

My attention has recently been directed to Mourt's relation of the Landing at Plymouth, from his having borrowed Higgeson's account of the plants around Salem, pretending that at Plymouth although "in winter" there were growing around the landing-place

"sorrel, yarrow, carvel, brookline, liverwort, watercresses, etc.":

"sorrell, brookeline, liverwort, carvell, and watercresses"

were found in 1630 by Higgeson around Salem (Hist. coll. i. p. 121):

"carvell" (chervil) is pretty clearly Osmorhiza longistylis, observed by myself in Paradise in the broken rocky place in front of Gen. Devereux's residence; perhaps the very spot where it was seen by Higgeson.

"brookeline", Veronica beccabunga, has been observed by myself in the cedar-margined outlet of Mineral-spring pond; and may have been seen there by Higgeson, especially as he describes the "giants battle-field" (the scattered boulders).

Higgeson also mentions "two kinds of flowers very sweet, which they say are good to make cordage" (Apocynum androsæmifolium, and the depressed form of A. cannabinum growing around Middleton pond and pointed out to me by Oakes).

Truly yours,

Charles Pickering

John Robinson Esq.

Salem, Mass.

North Conway, July 15th, 1875

Dear Sir,

I enclose a sketch from memory of Wenham Swamp, that may at least serve to indicate localities of plants.

Wolf Island is a lonely place, and with its surroundings (the extensive swamp and river-marsh) furnishes a test for distinguishing indigenous from imported plants. There is hardly more than one source of possible error:— rivers bring down seeds, and may transport those of imported plants into wild situations for development under favouring soil and climate.

The first colonists found our country covered with forest excepting salt-marshes, bogs, and a few river-marshes subject to overflow: salt-marshes in consequence were extravagantly prized, being about the only places affording feed for cattle. After making openings in the forest, the colonists began to sow grass-seeds, and thus introduced confusion into the flora of Essex County.

Phleum pratense seems an American grass, introduced into Europe. It grows in the wildest situations throughout New England; as far also as the Arctic Circle, occurring in Iceland (Hook.) and Lapland (Wats.), but I cannot find old European names. My Grandfather used to cultivate it and call it "herd's grass".

Phalaris arundinacea is at least indigenous in America, like the preceding reaching the Arctic Circle. It is known to grow in Northern Europe, Siberia, and Japan.

Glyceria aquatica, common to Europe, seen by myself only in this river-marsh and in marshy ground near St. John N. B.

Echinochloa crus-galli is pretty clearly an American grass, introduced into Europe.

Panicum ensifolium Baldw., abounding in this river-marsh. Probably not known to Dr. Gray.

Agropyrum repens may prove an American grass: but belongs to dry ground.

Myriophyllum ambiguum var. limosum, on the muddy strand. I am not now sure that I have seen M. tenellum in company.

Potentilla Norwegica may prove an American species introduced into Scandinavia.

Sparganium simplex, growing about a dozen years ago at the outlet of Pleasant pond. The only time I ever saw it within the limits of Essex County.

Sparganium ramosum I used to find in Essex County (localities not remembered). Of late years I have seen it in the bog beyond Greenland N.H., also near Philadelphia.

Carex exilis, discovered by myself in the marshes around Wenham pond and along its outlet. Afterwards found by Oakes below the junction of this outlet with Ipswich river, also "in Danvers".

Carex Oederi (determined by English Botany) I used to find in the pasture-land of my grandfather's farm, clearly introduced. "C. Oederi" of Dewey and American botanists is a distinct indigenous species (not seen in Eastern Massachusetts) and its name should be changed.

Carex maritima, I found in a salt-marsh at Orne's Point, and do not feel sure that it will prove indigenous.

Carex praecox, seemingly wild in the woods on Orne's Point. Afterwards found by Oakes in Ipswich.

Salicornia ambigua, as appears from one of Mr. Oakes' letters, was found by myself on "Cape Ann".

Chenopodina Americana (Salsola of Michaux?). Not more than a foot high, growing in the wet salt-marsh and not in the sand, the stem simple or with few branches, root perennial.

Epilobium strictum, Muhl. (E. molle, Torr.), once found in pasture-land on my grandfather's farm.

Trichophorum lineatum. Oakes in letter Sept. 6th, 1824, says "Your Trichophorum is Scirpus lineatus Mich".

Solidago squarrosa. Oakes in letter Feb. 20. 1828 says "I found last fall fine specimens of Sol. squarrosa in your locality." (This must have been in Essex County, but I do not remember where).

Gerardia purpurea of Eastern Massachusetts is probably distinct from that bearing the same name in our Middle States; observed around Philadelphia two feet high, with flowers twice as large.

Glaux maritima, in wet salt-marshes around Salem.

Rudbeckia hirta, an indigenous plant, has entered Essex County since I left in 1826. It was observed in Pennsylvania by Muhlenberg, by myself near Philadelphia, and is entered on my Catalogue (finished in 1837) as not North of Lat. 40°. How far the invasion is attributable to the removal of the forest, remains an open question.

I have found a list of 276 of the rarer plants of Essex County (made out before my visit to the White Mountains), which will aid materially in refreshing my memory.

On second thoughts, Cardamine bellidifolia may have been found on the White Mountains before the visit of Oakes and myself in 1825. Saxifraga rivularis was discovered by myself under dripping rocks at the bottom of the Grand Gulf.

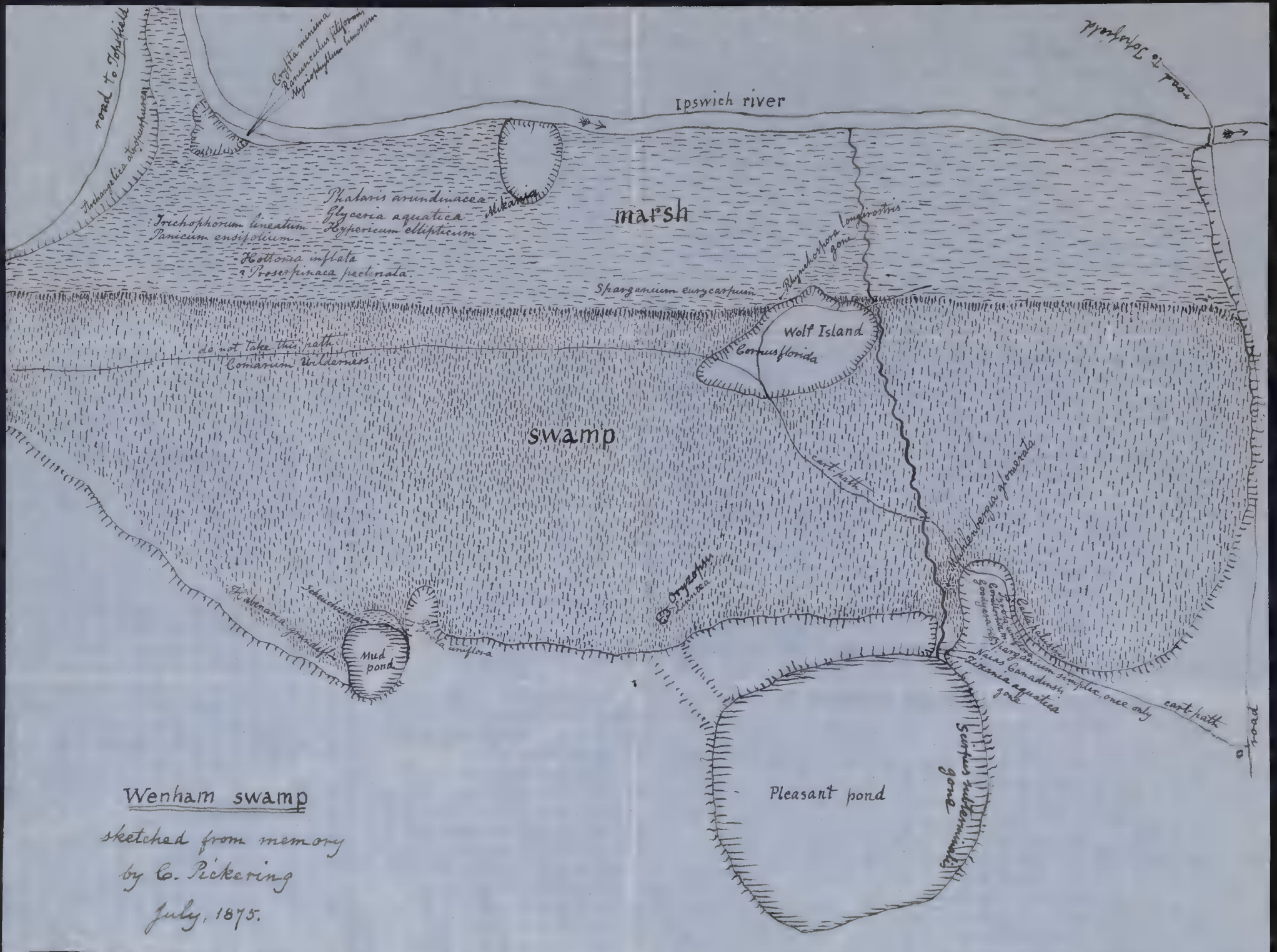
I have a List of the plants growing on the Alpine portion of the White Mountains, made out soon after our return, and will furnish a copy if you desire.

Very truly Yours,

Charles Pickering

to John Robinson Esq.

Salem, Mass.



Wenham swamp

sketched from memory

by C. Pickering

July, 1875.

Philadelphia, June 2, 1875.

My dear Sir,

I have just received your letter of the 23d ult., and learn that your pamplet on Ferns is in Boston, where I shall find it on my return.

I well remember being introduced to you some years since at the rooms of the Essex Institute

Your remark on the biennial appearance of the Drabas is interesting and worth following up. – The root of the specimen sent looks rather strong for a small annual?

I have no connected list of the plants observed by myself in Essex County, but I probably could recall most of them from a general List of N. American plants I made out soon afterwards; and shall be happy to

communicate all I know of – such as –

Parnassia in a slight ravine on the Lynn side of the Swampscot depot.

Hibiscus palustris, near the mouth of the ravine at the beach.

Blitum maritimum, Chelsea beach near mouth of Saugus river –

Typha angustifolia, smaller and more slender with two fertile spikes instead of one (prob. not known to A. Gray) – West side turnpike near Chelsea shore of Lynn marshes.

I should also take great pleasure in pointing out some of the nooks containing rare plants ferreted out by Oakes and myself, if you are disposed to make excursions.

Truly Yours,
Charles Pickering.

John Robinson Esq.
Salem, Mass.

Ans. rec'd.

Boston, March 24th, 1877

Dear Sir,

To day, in looking over a package of books received by the way of Salem, the accompanying bill for 50 cts came to light, and I fear you have never been paid.

I have hitherto been under the impression that foreign letters could be re-forwarded to their true address without additional postage, but I learn that this cannot be done after a letter has been taken away from the P. Office. I fear therefore that some one has been at expense for postage on my account.

I enclose one dollar to liquidate these claims, and should there be a balance left, would like to have it devoted to for-

eign letters that may arrive hereafter.

I duly received your Check-list of N. American ferns; and hope you will continue the subject by supplying details. Now that the Botanical season is approaching I hope to see more of you — especially I should like to show you the spot over in Paradise where I think Higgeson found his "carvell" (chervil) nearly two hundred and fifty years ago.

Yours truly

Charles Pickering.

John Robinson Esq.

Salem, Mass.